NAVAL TECHNICAL TRAINING COMMAND

SCHEMATIC DIAGRAMS

DEVICE 8H7

ADVANCED FIRST TERM AVIONICS COURSE

CNTT-M607 (Rev. 11/84)

NAVAL AIR TECHNIC
NAVAL AIR STATION MEM

For Training

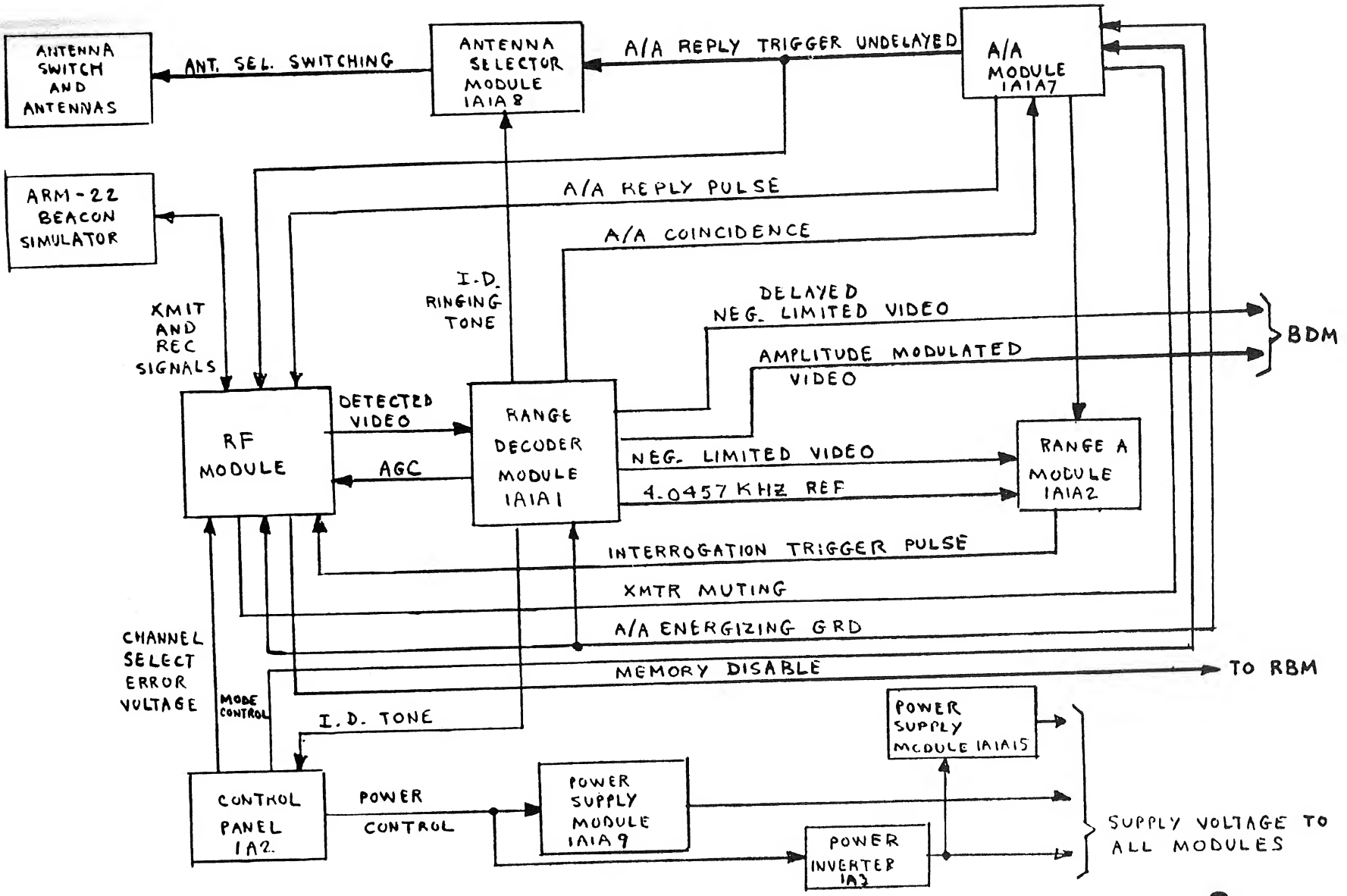
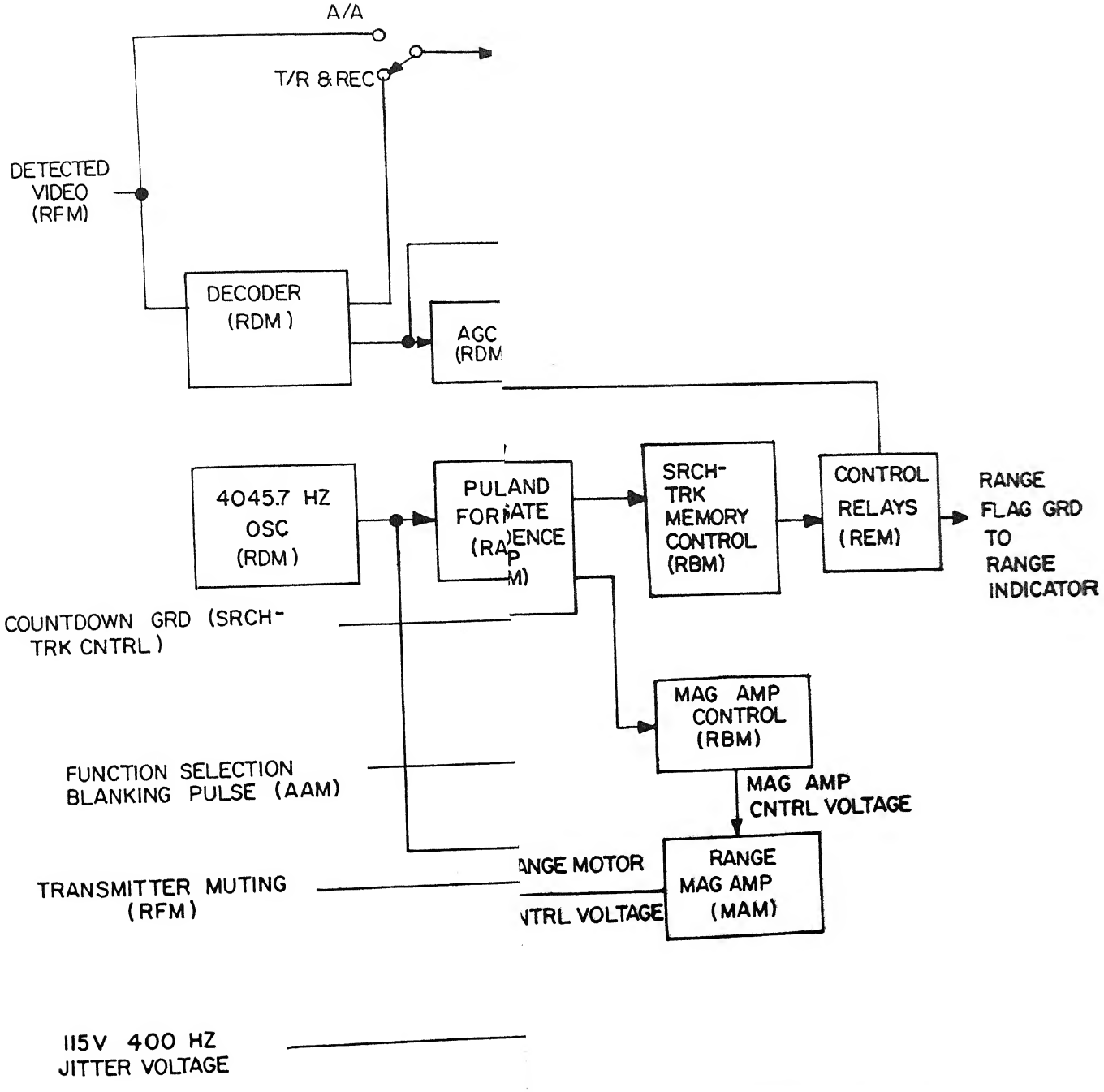


Figure 4-2. Receive-Transmit Function, Block Diagram



). Ranging System, Simplified Block Diagram

3

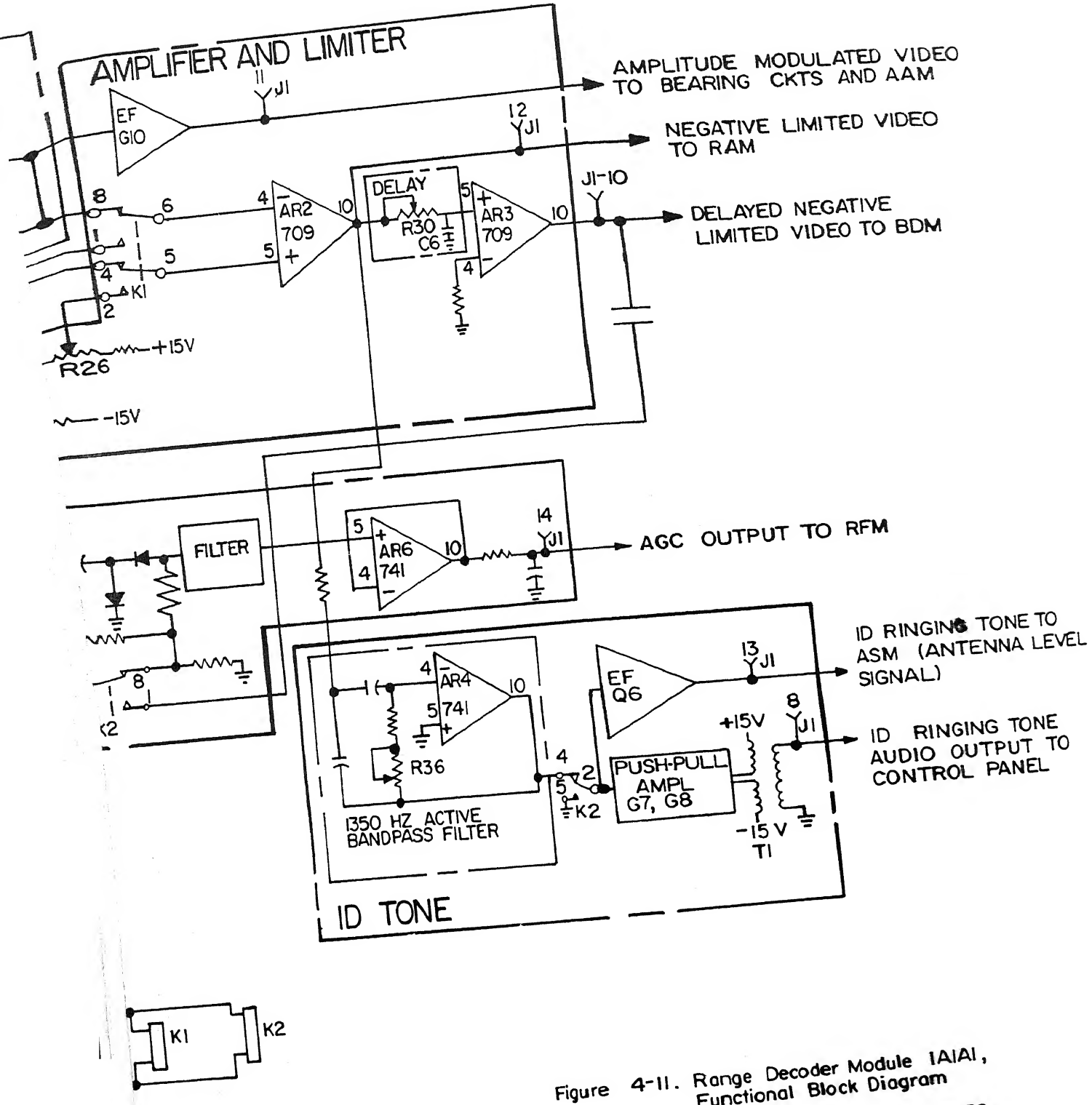
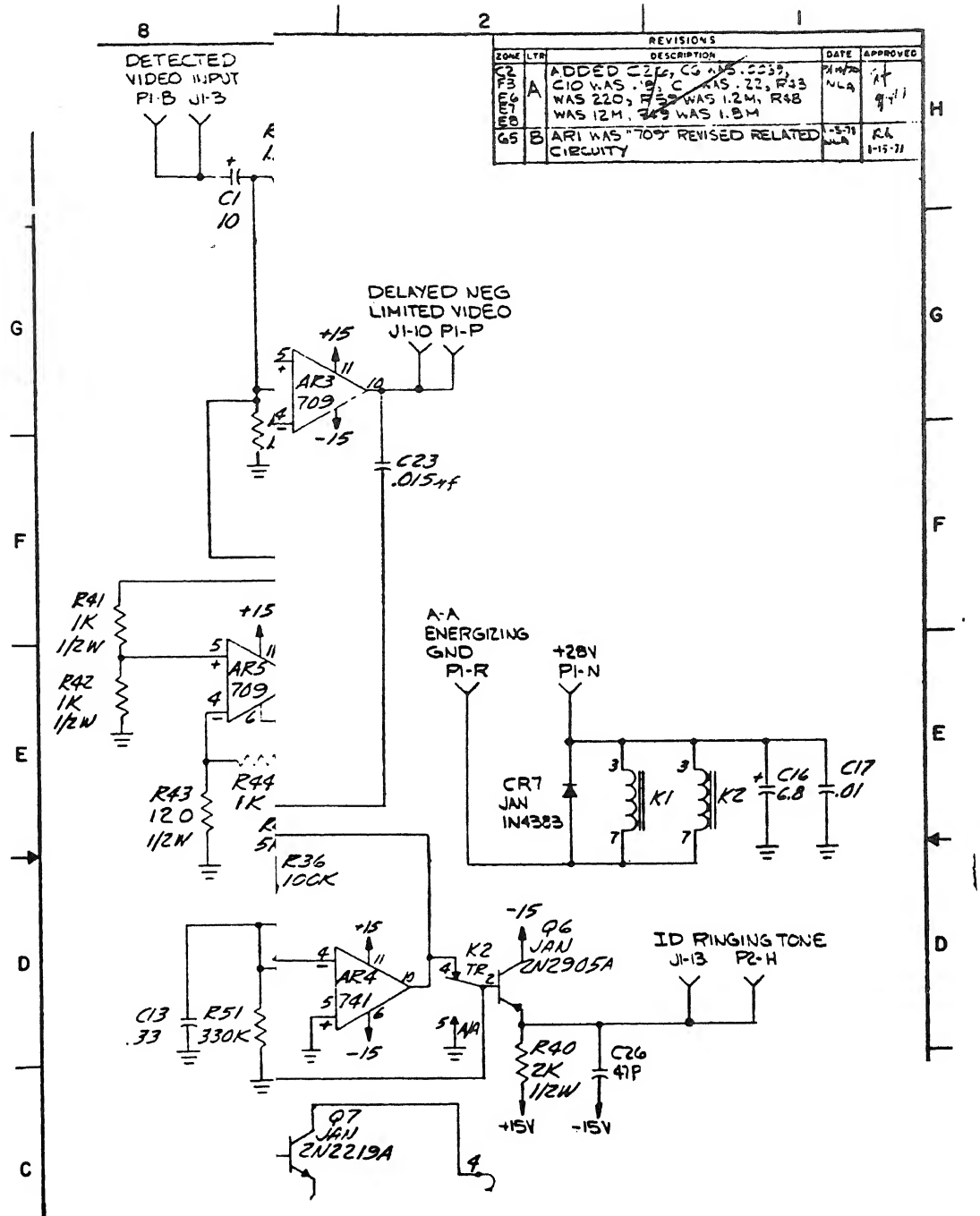


Figure 4-11. Range Decoder Module 1A1A1, Functional Block Diagram


8
2
1
REVISIONS
ZONE | LTR | DESCRIPTION | DATE | APPROVED
C2 F3 E6 E7 E8 | A | ADDED C2[illegible], C6 WAS .0039, C10 WAS .18, C[illegible] WAS .22, R33 WAS 220, R[illegible] WAS 1.2M, R48 WAS 12M, [illegible] WAS 1.8M | [illegible] NLA | [illegible]
G5 | B | AR1 WAS "709" REVISED RELATED CIRCUITY | [illegible] NLA | R.A. 1-15-71
DETECTED VIDEO INPUT
P1-B J1-3
C1
10
DELAYED NEG LIMITED VIDEO
J1-10 P1-P
+15
AR3
709
-15
C23
.015uf
R41
1K
1/2W
R42
1K
1/2W
R43
120
1/2W
R44
1K
R36
100K
A-A
ENERGIZING
GND
P1-R
+28V
P1-N
CR7
JAN
IN4383
K1
K2
C16
6.8
C17
.01
AR4
741
C13
.33
R51
330K
Q6
JAN
2N2905A
K2
TR2
AA
ID RINGING TONE
J1-13
P2-H
R40
2K
1/2W
C26
47P
+15V
-15V
Q7
JAN
2N2219A
NOTES:
1. UNLESS OTH
FOR RESISTOR
OR MICROFAR
- 1/4 WATT, 5%
2. ALL REFERE
FOR COMPL

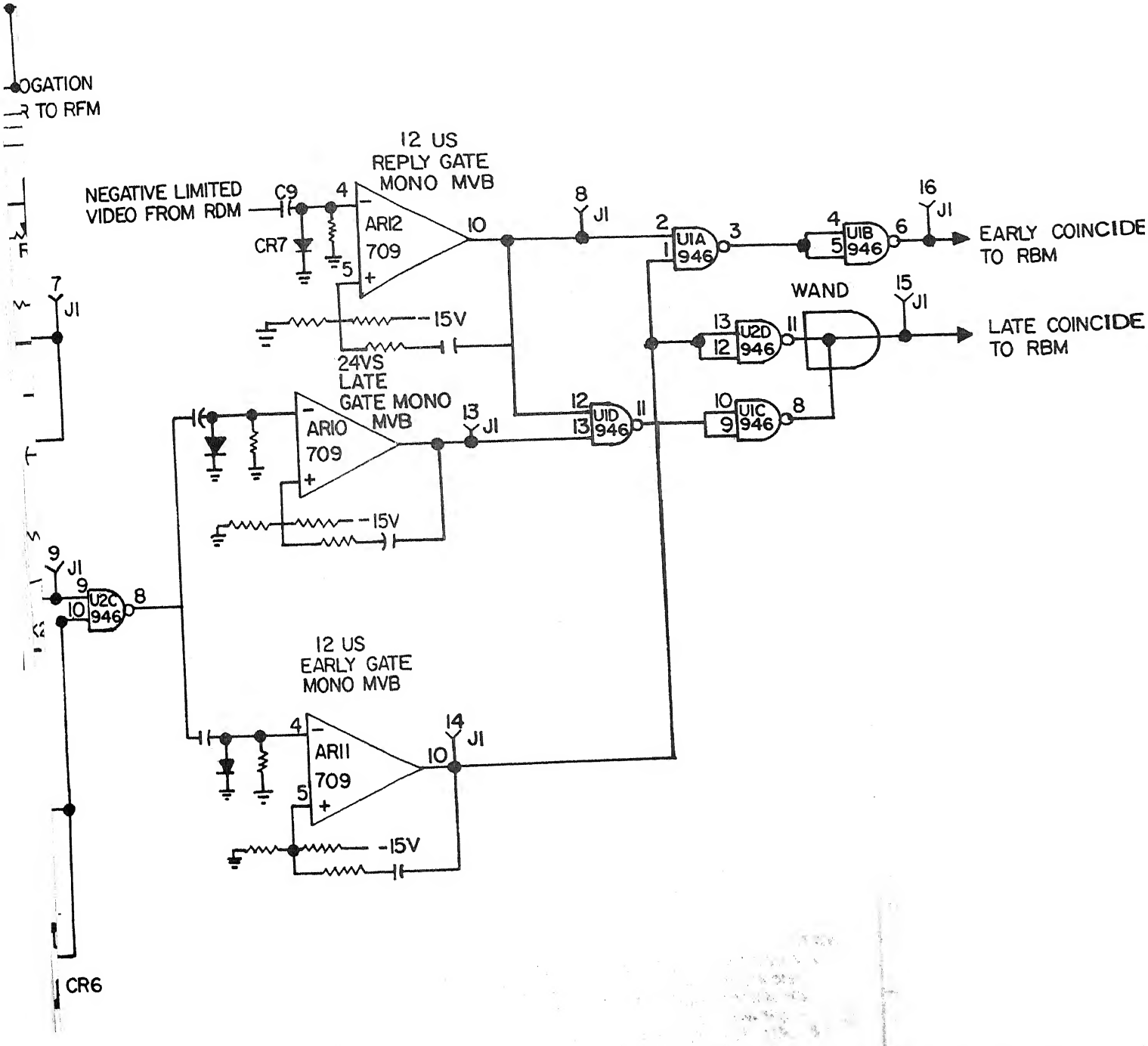
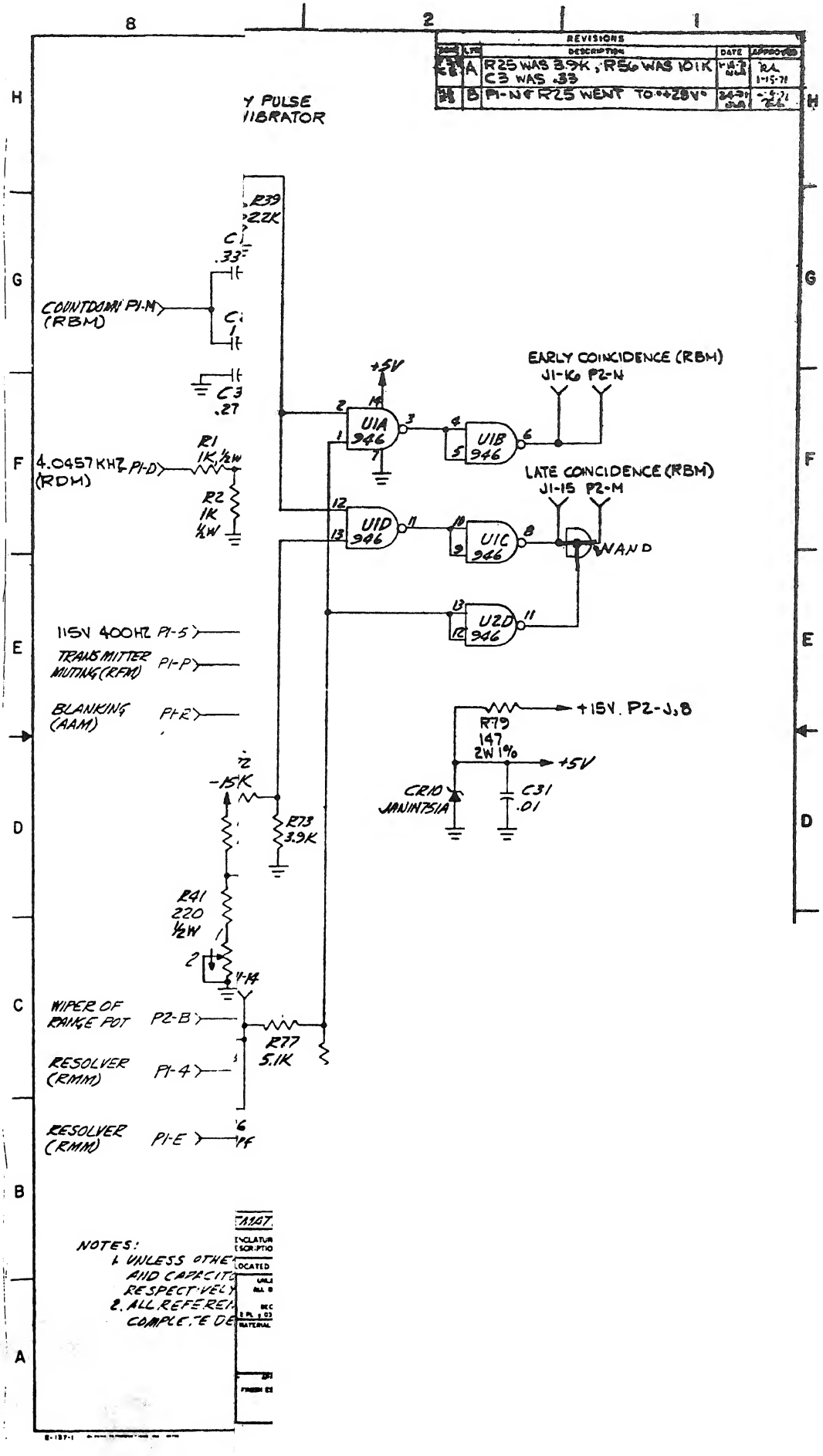


Figure 4-12. Range A Module 1A1A2, Functional Block Diagram


REVISIONS
A R25 WAS 3.9K, R56 WAS 10.1K C3 WAS .33
B P1-N TO R25 WENT TO +28V
Y PULSE
IIBRATOR
R39 22K
C1 .33
COUNTDOWN P1-M (RBM)
C3 .27
+5V
EARLY COINCIDENCE (RBM)
J1-K P2-N
U1A 946
U1B 946
R1 1K ½W
4.0457 KHZ P1-D (RDM)
R2 1K ¼W
LATE COINCIDENCE (RBM)
J1-15 P2-M
U1D 946
U1C 946
WAND
U2D 946
115V 400HZ P1-5
TRANSMITTER MUTING (RFM) P1-P
BLANKING (AAM) P1-R
+15V. P2-J,8
R79 147 2W 1%
+5V
CR10 JAN1N751A
C31 .01
-15K
R73 3.9K
R41 220 ½W
WIPER OF RANGE POT P2-B
R77 5.1K
RESOLVER (RMM) P1-4
RESOLVER (RMM) P1-E
NOTES:
1. UNLESS OTHE
AND CAPACIT
RESPECTIVEL
2. ALL REFERE
COMPLETE DE

RELAY SWITCHING LOGIC

RELAY	SEARCH	LATE	TRACK	MEMORY
K2	ON	ON	OFF	ON
K1 K3,K4	ON	OFF	OFF	OFF
K5,K6	OFF	ON	ON	ON

NOTE: ALL RELAYS SHOWN IN OFF (DEENERGIZED) POSITION.

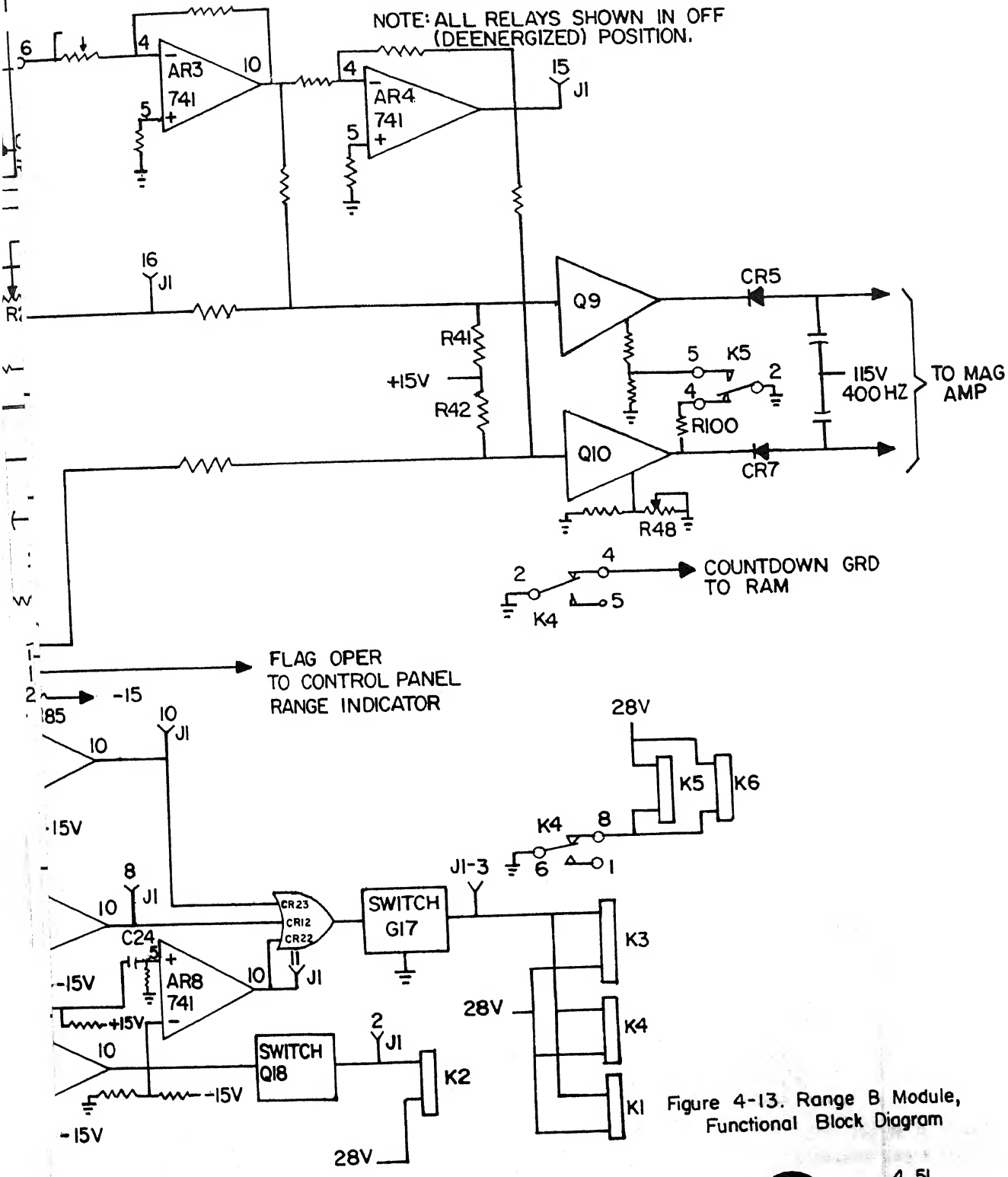
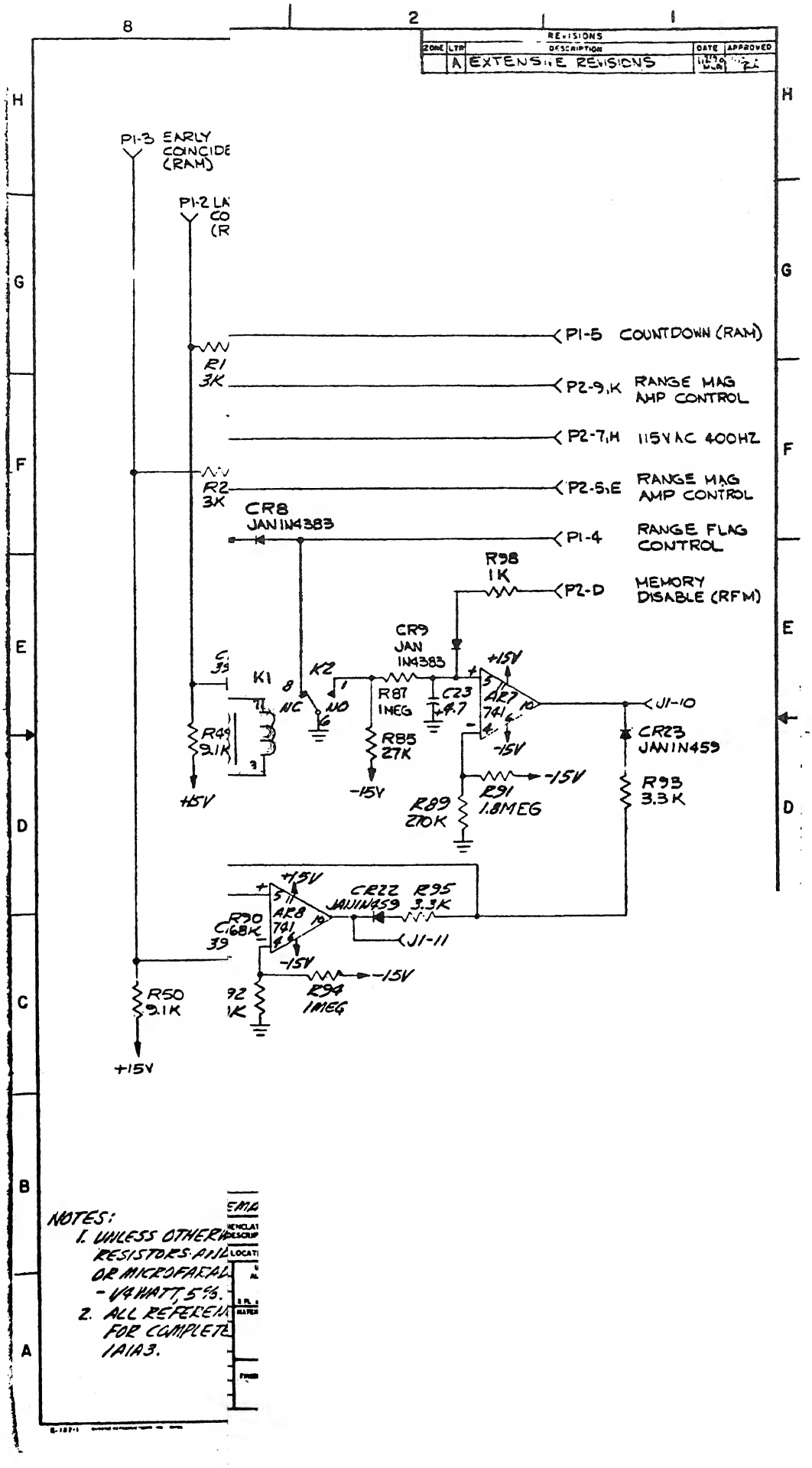


Figure 4-13. Range B Module, Functional Block Diagram

8


REVISIONS
ZONE LTR DESCRIPTION DATE APPROVED
A EXTENSIVE REVISIONS
P1-3 EARLY COINCIDE (RAM)
P1-2 LA CO (R
P1-5 COUNTDOWN (RAM)
R1 3K
P2-9,K RANGE MAG AMP CONTROL
P2-7,H 115V AC 400HZ
R2 3K
P2-5,E RANGE MAG AMP CONTROL
CR8 JAN1N4383
P1-4 RANGE FLAG CONTROL
R98 1K
P2-D MEMORY DISABLE (RFM)
CR9 JAN 1N4383
+15V
K1
K2
NC
NO
R87 1MEG
C23 4.7
AR7 741
J1-10
CR23 JAN1N459
R49 9.1K
R85 27K
-15V
R91 1.8MEG
R89 270K
R93 3.3K
AR8 741
CR22 R95 JAN1N459 3.3K
J1-11
R90 C 68K
R94 1MEG
R50 9.1K
+15V
NOTES:
1. UNLESS OTHER
RESISTORS ARE
OR MICROFARAD
- 1/4 WATT, 5%.
2. ALL REFEREN
FOR COMPLETE
IAIA3.

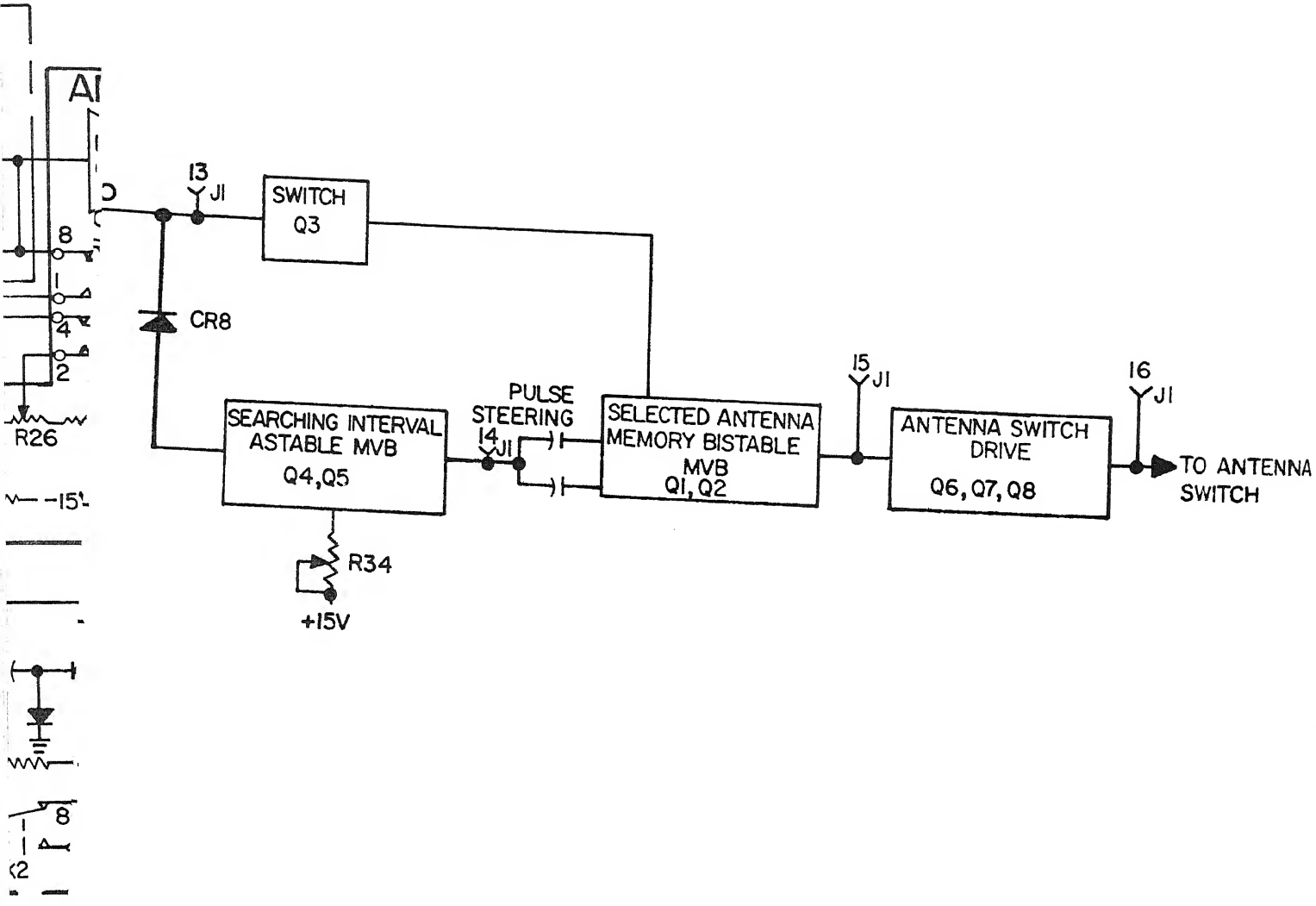
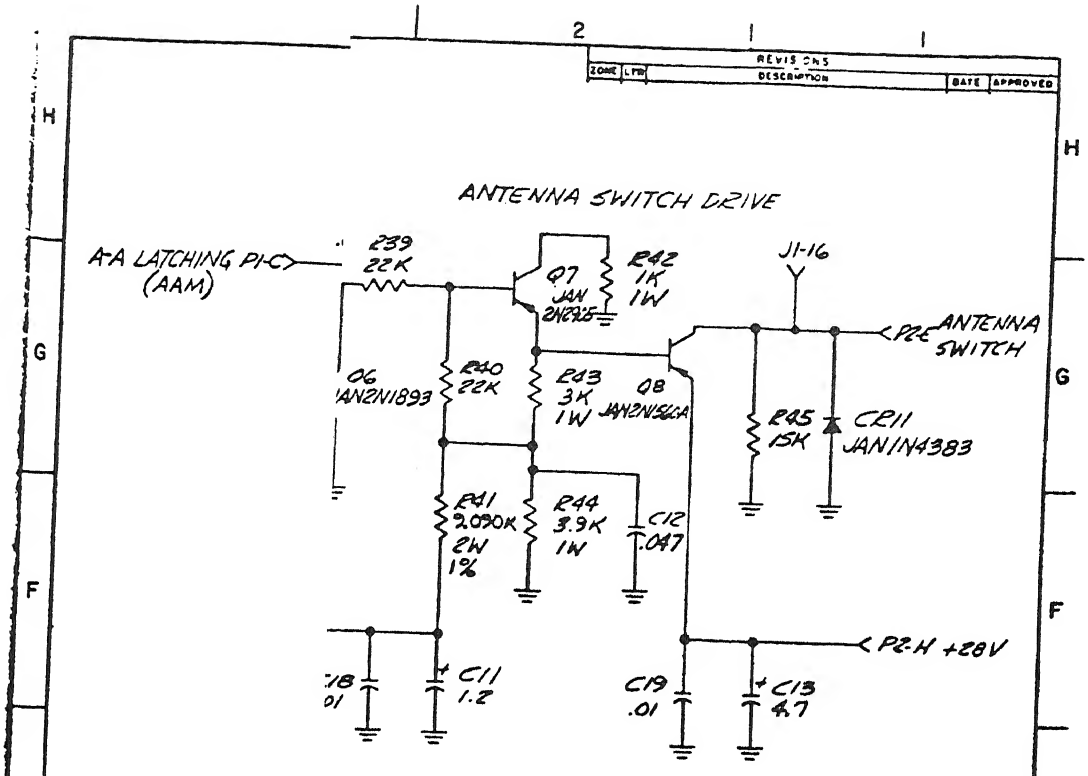


Figure 4-9. Antenna Selector Module 1A1A8, Functional Block Diagram



HIGHEST REFERENCE DESIGNATIONS			
CR11	Q8	R45	C19
REFERENCE DESIGNATIONS NOT USED			

NOTES:
1. UNLESS OTHERWISE ... AND CAPACITORS ARE ... RESPECTIVELY (K=10...
2. ALL REFERENCE DE... COMPLETE DESIGNA...

MATERIAL LIST OF MATERIAL DO NOT SCALE DRAWING

HYDROSYSTEMS, INC
FARMINGDALE, L.I., N.Y.

NAVAL TRAINING DEVICE CENTER
ORLANDO, FLORIDA

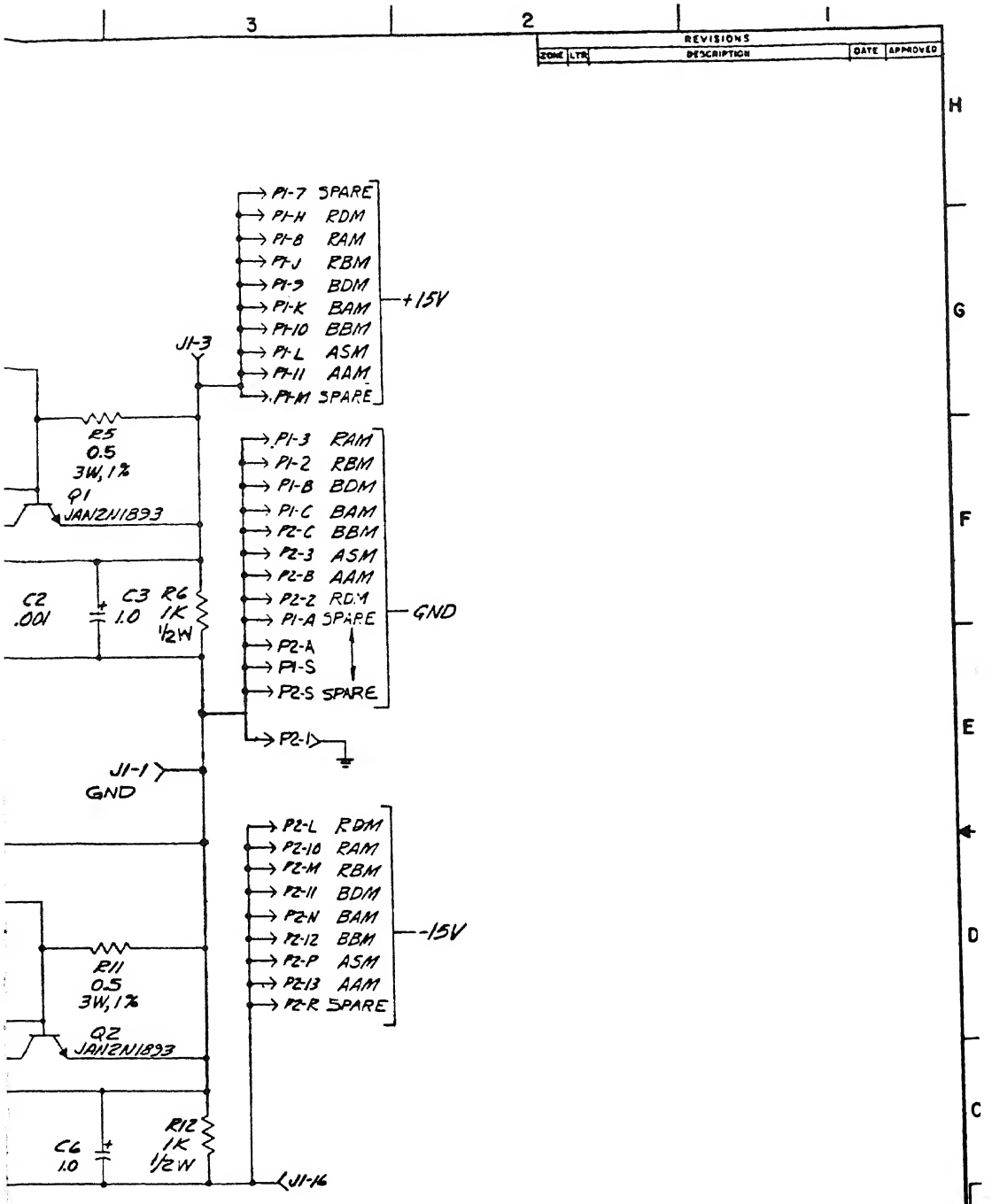
ANTENNA SELECTOR UNIT AN/A...
SCHEMATIC DIAGRAM OF TACAN TRAINER

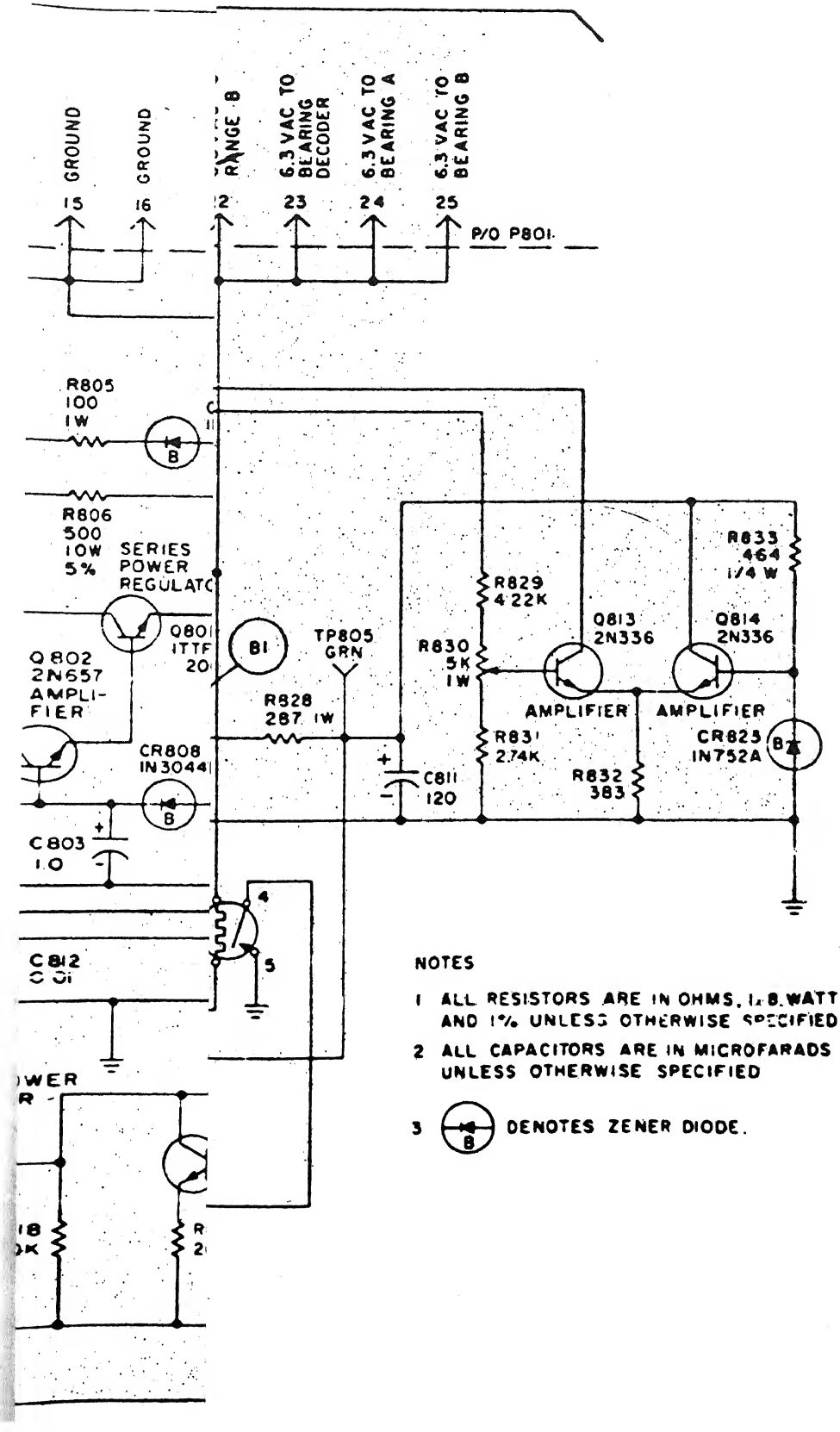
SIZE F | CODE IDENT NO 89297 | 9168500831C8 | REV

SCALE NONE | SHEET

CONTRACTORS CODE IDENT 23259

9168500831C8


3
2
1
REVISIONS
ZONE | LTR | DESCRIPTION | DATE | APPROVED
H
G
F
E
D
C
P1-7 SPARE
P1-H RDM
P1-B RAM
P1-J RBM
P1-9 BDM
P1-K BAM
P1-10 BBM
P1-L ASM
P1-11 AAM
P1-M SPARE
+15V
J1-3
R5
0.5
3W, 1%
Q1
JAN2N1893
P1-3 RAM
P1-2 RBM
P1-B BDM
P1-C BAM
P2-C BBM
P2-3 ASM
P2-B AAM
P2-Z RDM
P1-A SPARE
P2-A
P1-S
P2-S SPARE
GND
P2-1
C2
.001
C3
1.0
R6
1K
1/2W
J1-1
GND
P2-L RDM
P2-10 RAM
P2-M RBM
P2-11 BDM
P2-N BAM
P2-12 BBM
P2-P ASM
P2-13 AAM
P2-R SPARE
-15V
R11
0.5
3W, 1%
Q2
JAN2N1893
C6
1.0
R12
1K
1/2W
J1-16
CONTRACT NO N61339-69-C-0141
HYDROSYSTEMS, INC.
FARMINGDALE, L.I., N.Y.
NAVAL TRAINING DEVICE CENTER
ORLANDO FLORIDA
POWER SUPPLY UNIT IAIRS
SCHEMATIC DIAGRAM OF
TACAN TRAINER
12
F
89297
976850C83109
CONTRACTORS CODE IDENT 23259


15 GROUND
16 GROUND
22 RANGE B
23 6.3 VAC TO BEARING DECODER
24 6.3 VAC TO BEARING A
25 6.3 VAC TO BEARING B
P/O P801
R805 100 1W
R806 500 10W 5% SERIES POWER REGULATO
Q801 ITTF 20
Q802 2N657 AMPLI-FIER
B1
TP805 GRN
R828 287 1W
CR808 IN3044
C803 1.0
C812
R829 4.22K
R830 5K 1W
R831 2.74K
R832 383
Q813 2N336
Q814 2N336
AMPLIFIER
AMPLIFIER
R833 464 1/4 W
CR823 IN752A
C811 120
4
5
NOTES
1 ALL RESISTORS ARE IN OHMS, 1/8 WATT AND 1% UNLESS OTHERWISE SPECIFIED
2 ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED
3 DENOTES ZENER DIODE.

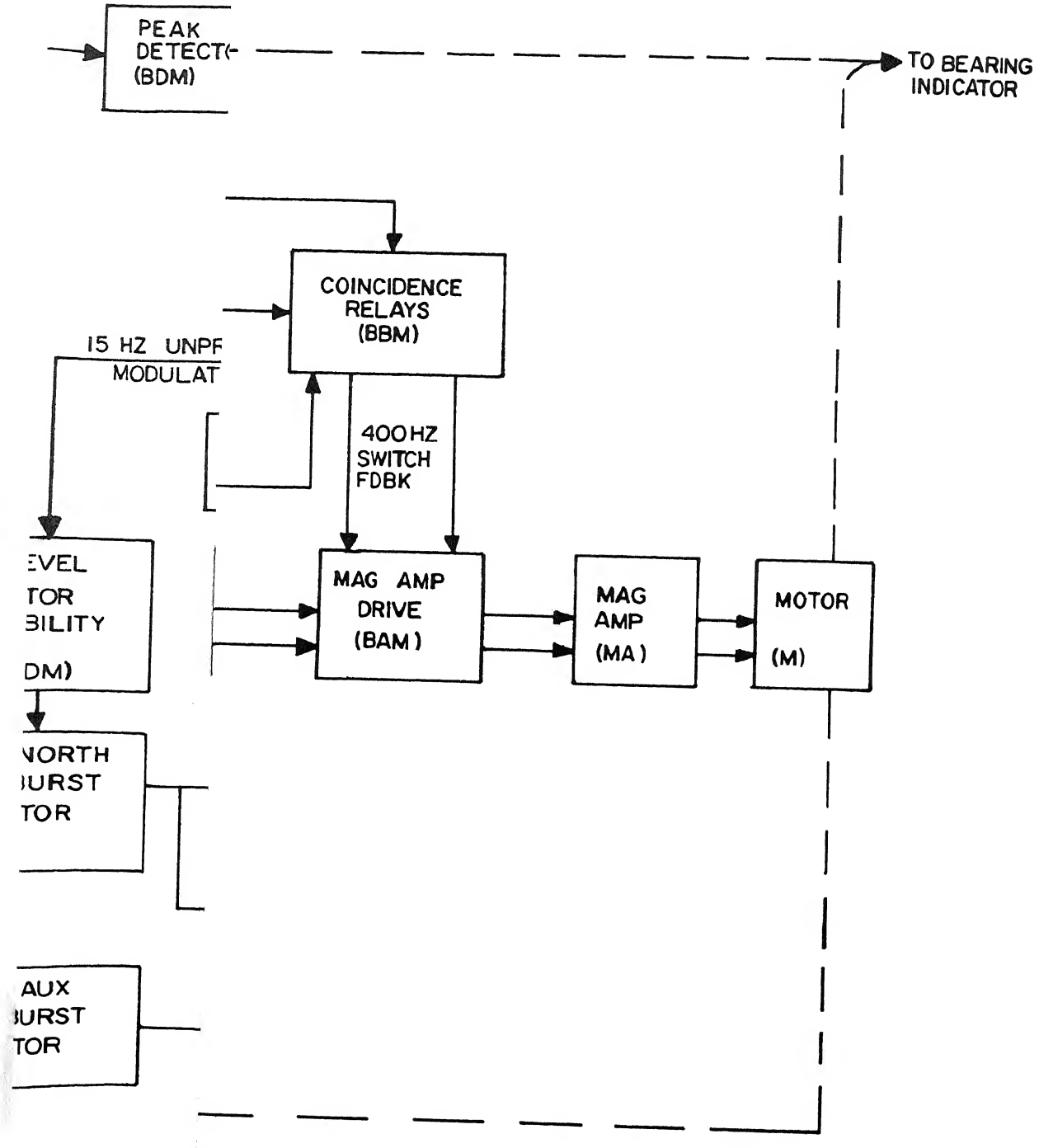


Figure 4-16. Bearing Subsystem, Functionctional Block Diagram

14

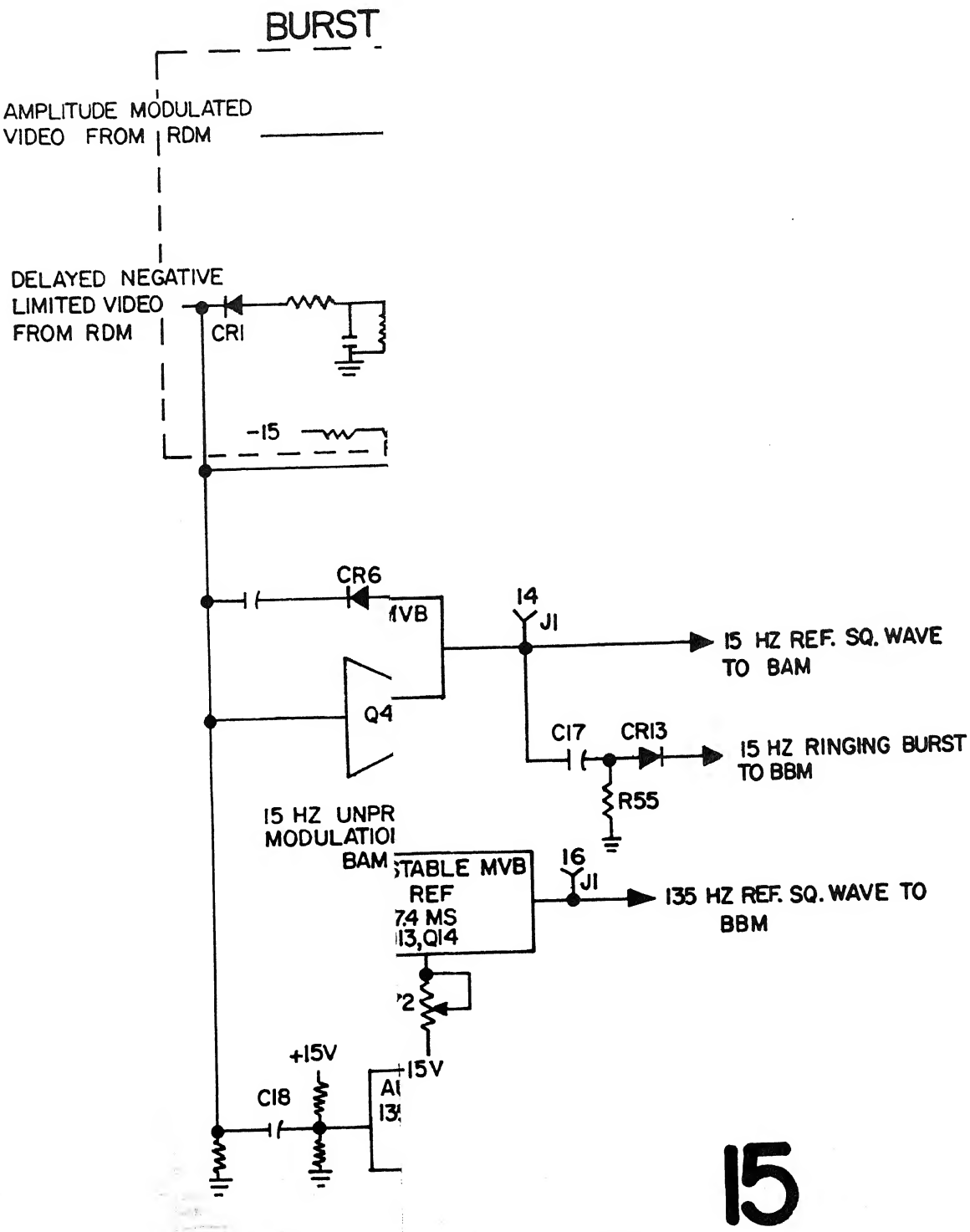
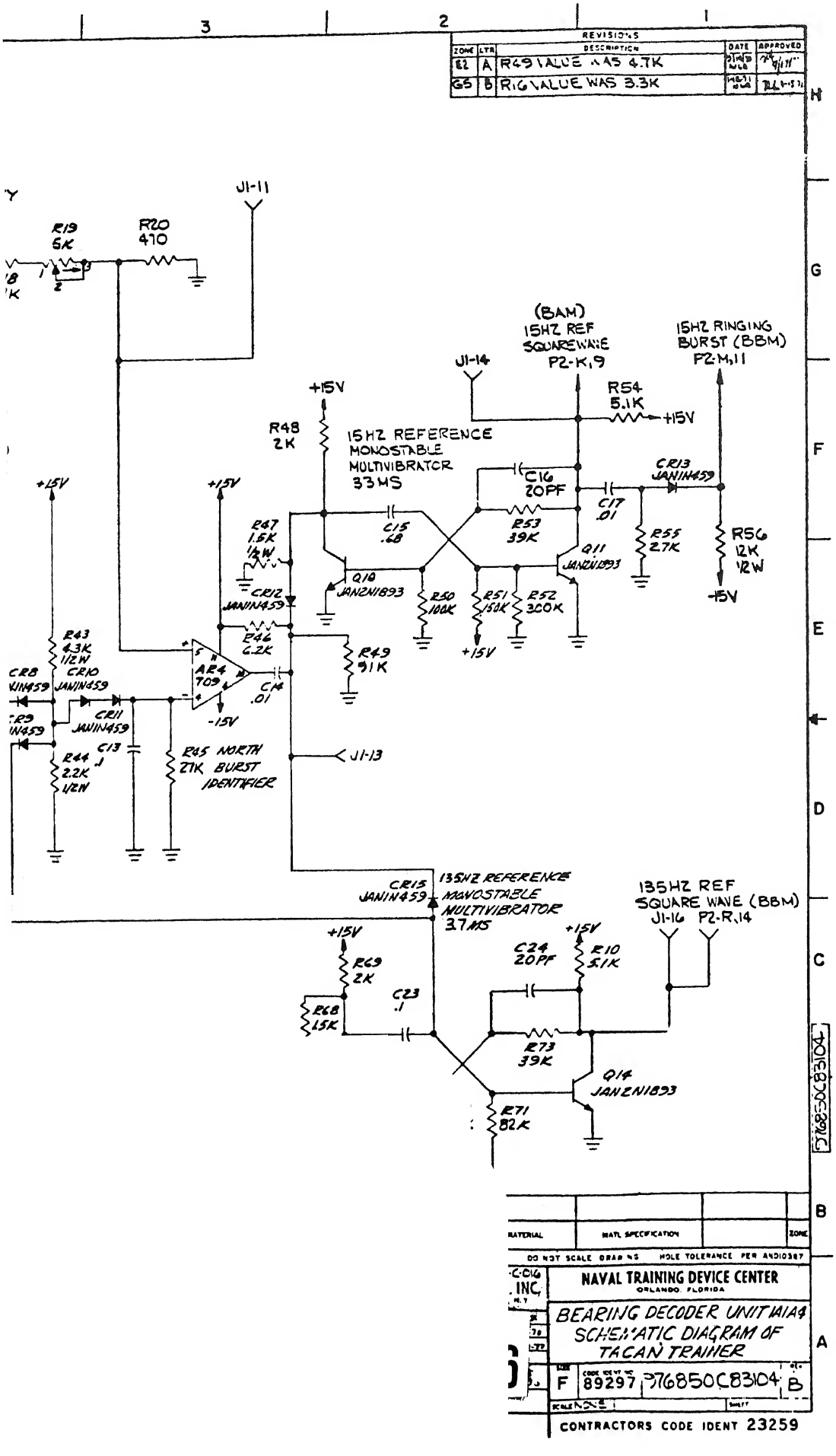
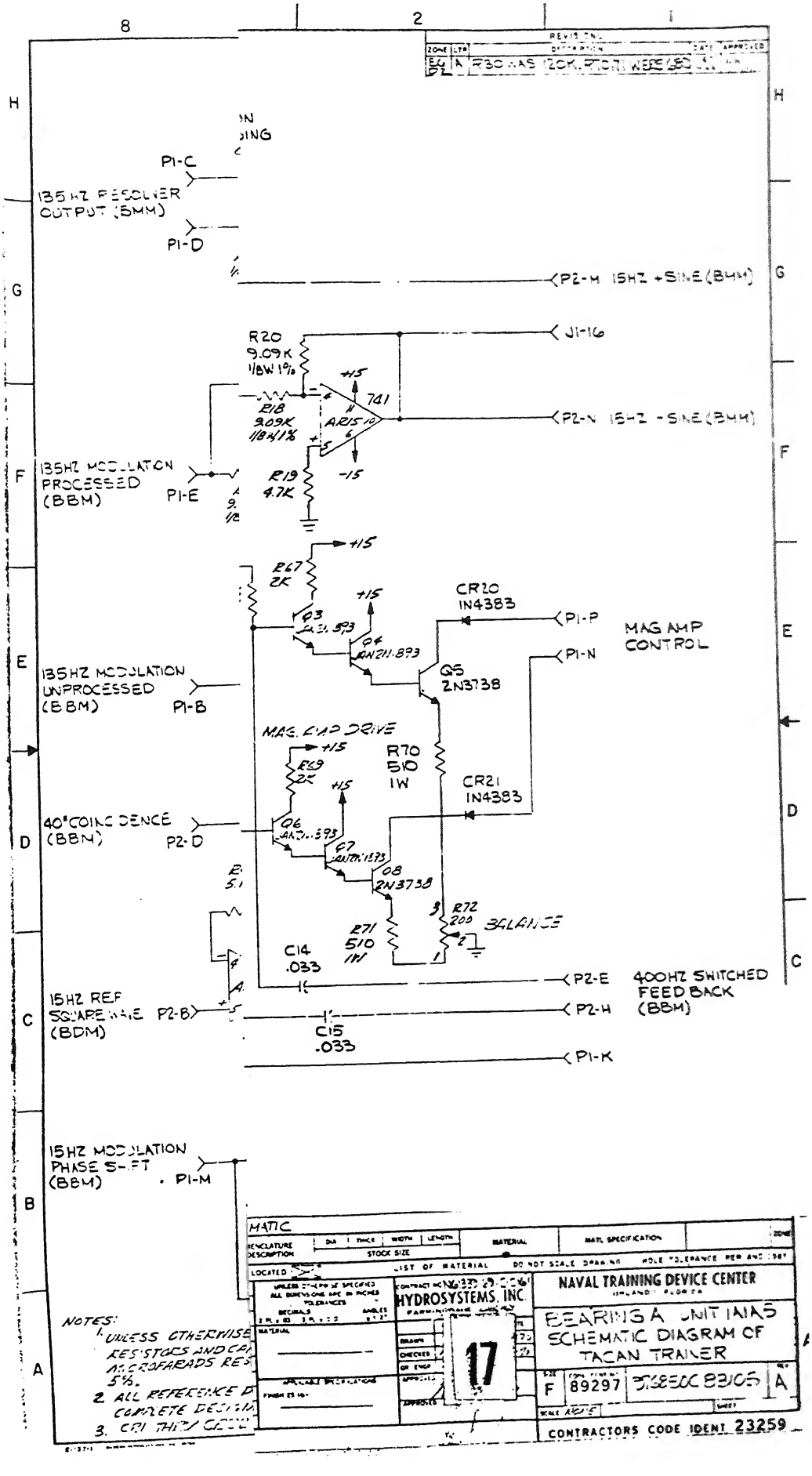
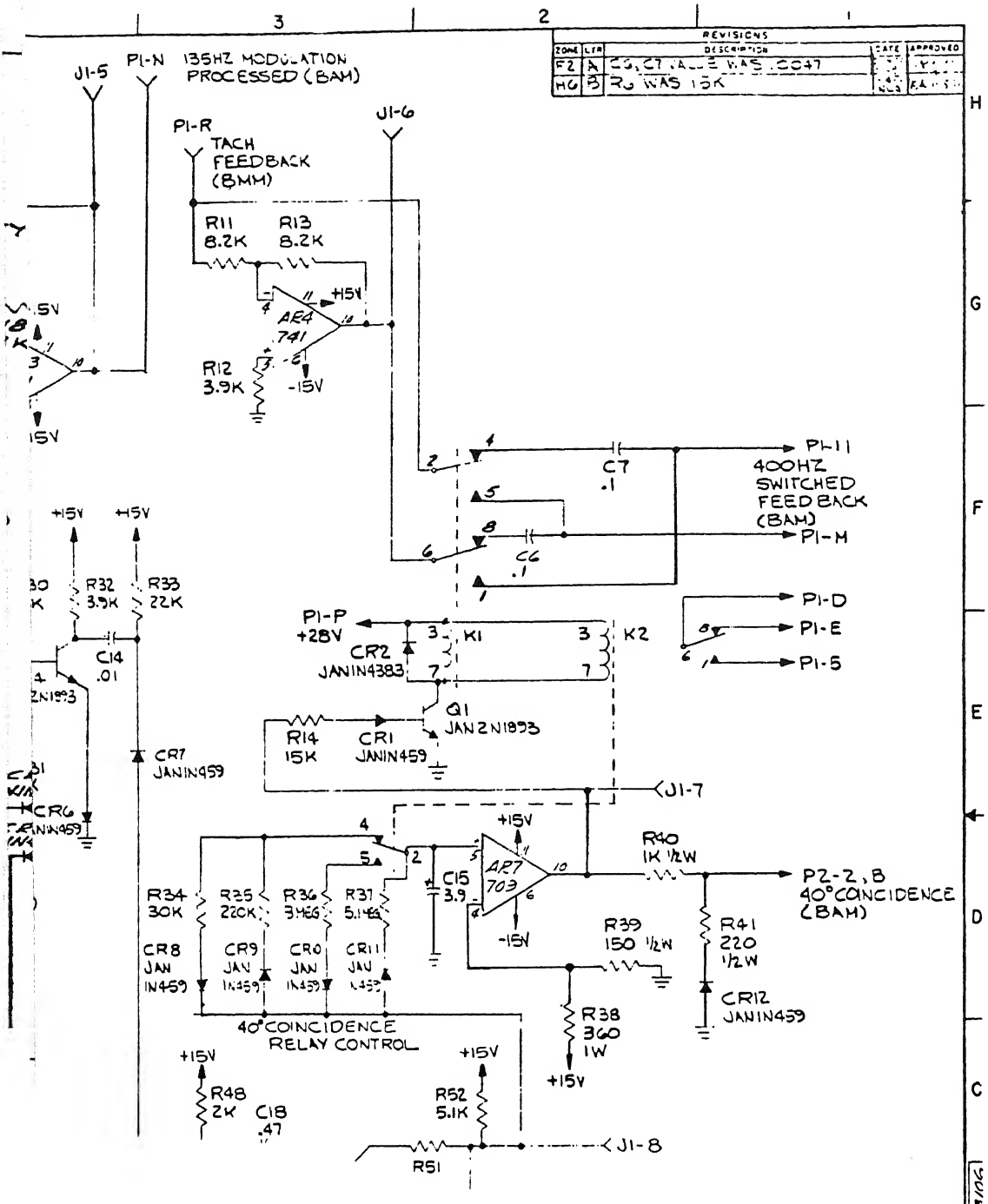


Figure 4-17. Bearing Decoder Module 1A1A4, Functional Block Diagram


REVISIONS
ZONE LTR DESCRIPTION DATE APPROVED
E2 A R49 VALUE WAS 4.7K
G5 B R16 VALUE WAS 3.3K
J1-11
R19 5K
R20 470
(BAM) 15HZ REF SQUAREWAVE P2-K,9
15HZ RINGING BURST (BBM) P2-M,11
J1-14
+15V
R54 5.1K
R48 2K
15HZ REFERENCE MONOSTABLE MULTIVIBRATOR 33MS
C16 20PF
CR13 JAN1N459
C17 .01
C15 .68
R53 39K
R55 2.7K
R56 12K 1/2W
R47 1.5K 1/2W
Q11 JAN2N1893
Q10 JAN2N1893
CR12 JAN1N459
R50 100K
R51 150K
R52 300K
R46 6.2K
R43 4.3K 1/2W
CR8 JAN1N459
CR10 JAN1N459
AR4 709
C14 .01
R49 91K
-15V
CR9 JAN1N459
CR11 JAN1N459
C13 .1
R44 2.2K 1/2W
R45 NORTH 27K BURST IDENTIFIER
J1-13
CR15 JAN1N459
135HZ REFERENCE MONOSTABLE MULTIVIBRATOR 37MS
135HZ REF SQUARE WAVE (BBM) J1-16 P2-R,14
C24 20PF
R10 5.1K
R69 2K
C23 .1
R68 15K
R73 39K
Q14 JAN2N1893
R71 82K
MATERIAL MATL SPECIFICATION ZONE
DO NOT SCALE DRAWING HOLE TOLERANCE PER ANDI0387
NAVAL TRAINING DEVICE CENTER ORLANDO, FLORIDA
BEARING DECODER UNIT WAIA4 SCHEMATIC DIAGRAM OF TACAN TRAINER
SIZE F CODE IDENT NO 89297 DWG NO 76850C83104 REV B
SCALE NONE SHEET
CONTRACTORS CODE IDENT 23259


8
2
H
G
F
E
D
C
B
A
P1-C
135 HZ RESOLVER OUTPUT (BMM)
P1-D
P2-M 15HZ +SINE (BMM)
R20 9.09K 1/8W 1%
J1-16
R18 9.09K 1/8W 1%
+15
-15
P2-N 15HZ -SINE (BMM)
135HZ MODULATION PROCESSED (BBM)
P1-E
R19 4.7K
E67 2K
CR20 IN4383
P1-P
MAG AMP CONTROL
P1-N
135HZ MODULATION UNPROCESSED (BBM)
P1-B
MAG. CLAD DRIVE
R70 510 1W
CR21 IN4383
E69 2K
40°COINCIDENCE (BBM)
P2-D
R72 200
BALANCE
R71 510 1W
C14 .033
P2-E
400HZ SWITCHED FEED BACK (BBM)
15HZ REF SQUARE WAVE (BBM)
P2-B
P2-H
C15 .033
P1-K
15HZ MODULATION PHASE SHIFT (BBM)
P1-M
NOTES:
1. UNLESS OTHERWISE
2. ALL REFERENCE D
3. CRI THIS CIRCU
MATIC
HYDROSYSTEMS, INC
NAVAL TRAINING DEVICE CENTER
BEARINGS & UNITARIAS
SCHEMATIC DIAGRAM OF
TACAN TRAINER
17
F
89297
CONTRACTORS CODE IDENT 23259



9768S0C83106-1	1	SCHEMATIC									
QTY PER UOD	PART OR IDENTIFYING NO	ITEM NO	CODE IDENT	NOMENCLATURE OR DESCRIPTION	DIA	THICK	WIDTH	LENGTH	MATERIAL	MATL SPECIFICATION	ZONE
					STOCK SIZE						

PART NUMBER MARKING PER MIL STD 130 LOCATED — LIST OF MATERIAL — NOT SCALE DRAWING — HOLE TOLERANCE PER ANSI Y14.5

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES: DECIMALS, ANGLES. MATERIAL. APPLICABLE SPECIFICATIONS. FINISHES.

DRAWN CHECKED SR ENGR MFG ENGR APPROVED

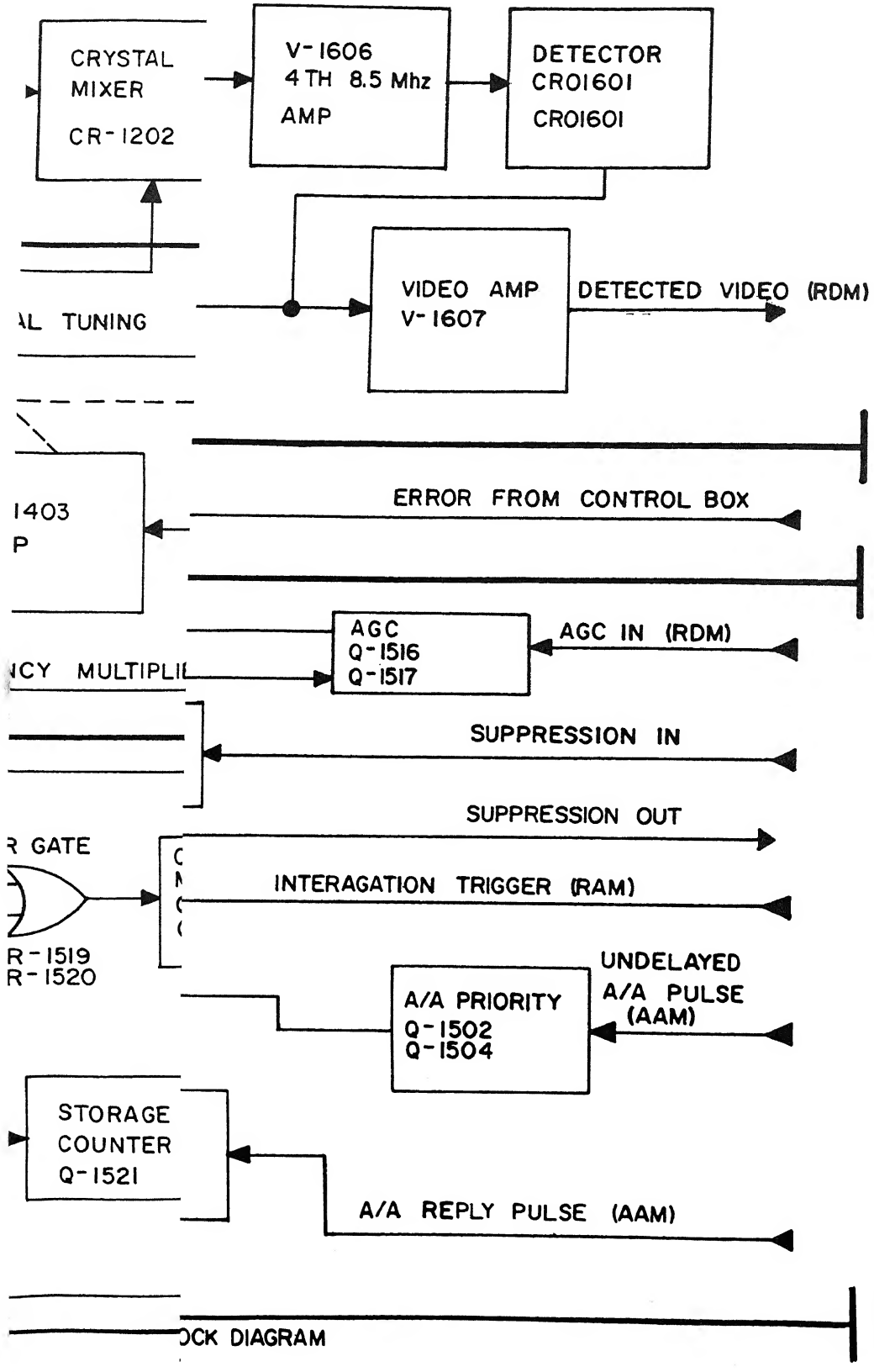
NAVAL TRAINING DEVICE CENTER
ORLANDO FLORIDA

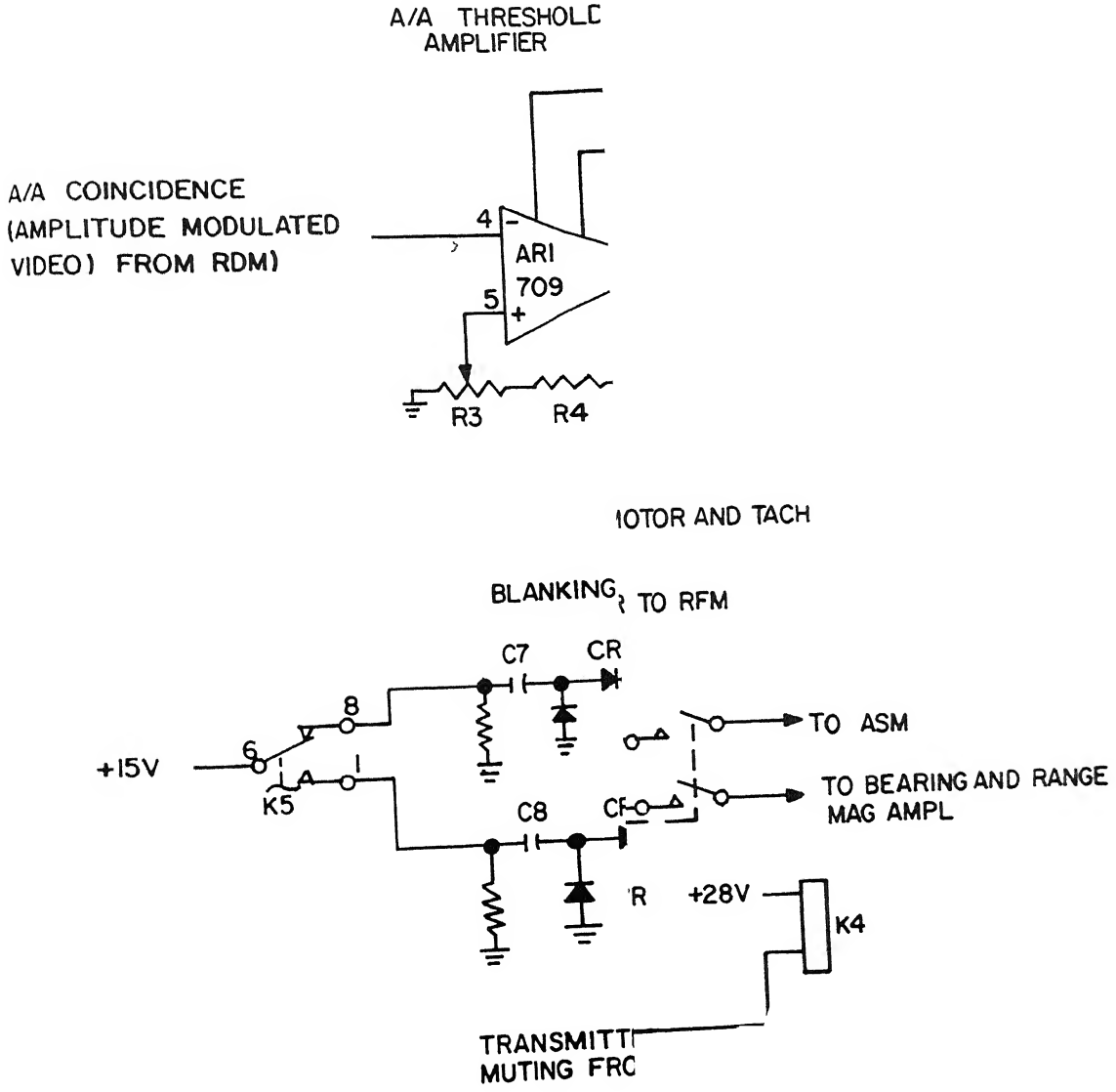
BEARING UNIT 1A1A6
SCHEMATIC DIAGRAM OF TACAN TRAINER

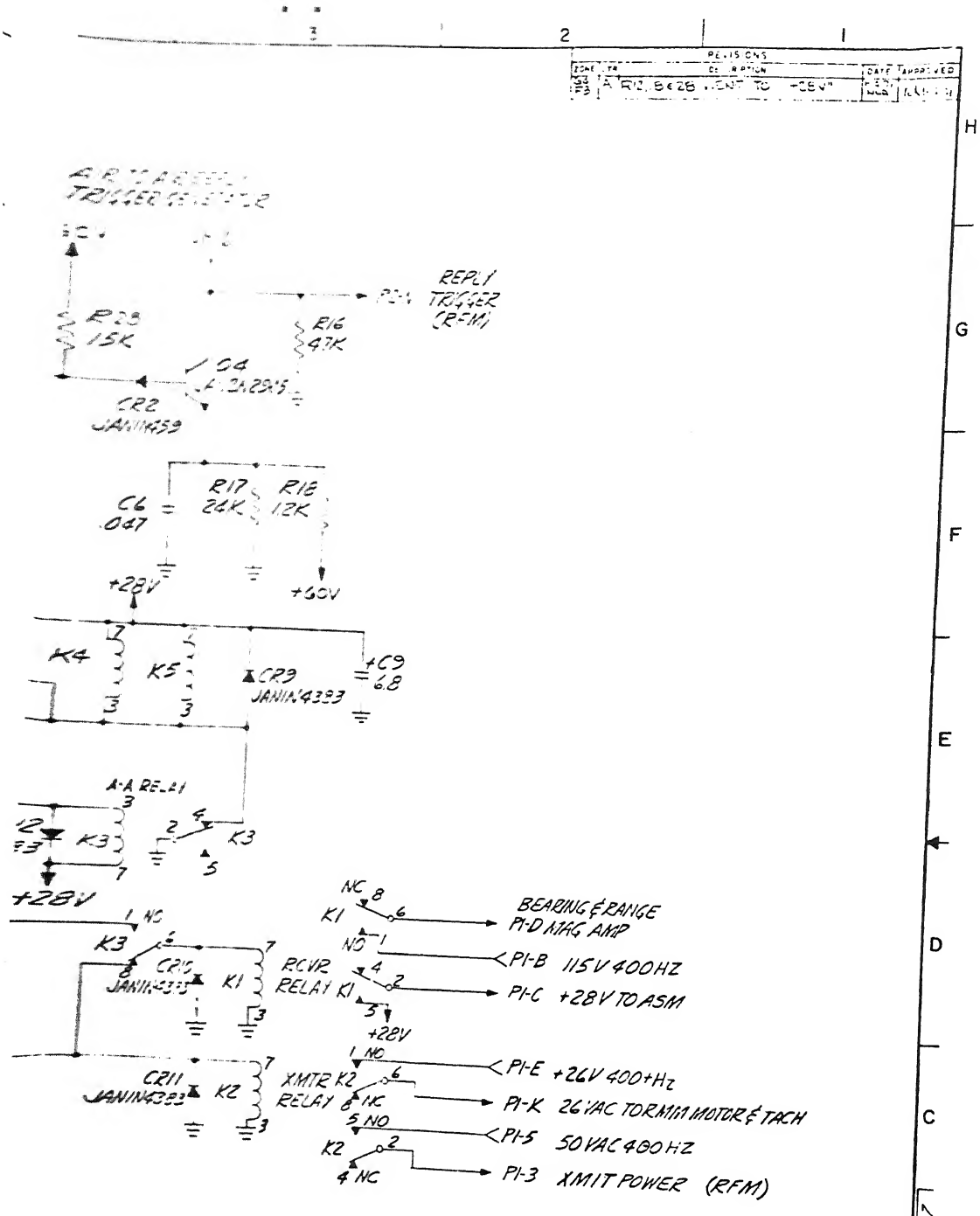
PEF	9768S0C83106	0047
STK RECD FINAL ASSY	NEXT ASSEMBLY	USED ON

SIZE	CAGE CODE NO	DRAWING NO	REV
F	89297	9768S0C83106	B

CONTRACTORS CODE IDENT 23259


CRYSTAL
MIXER
CR-1202
V-1606
4TH 8.5 Mhz
AMP
DETECTOR
CR01601
CR01601
VIDEO AMP
V-1607
DETECTED VIDEO (RDM)
AL TUNING
1403
P
ERROR FROM CONTROL BOX
AGC
Q-1516
Q-1517
AGC IN (RDM)
NCY MULTIPLI
SUPPRESSION IN
SUPPRESSION OUT
R GATE
INTERAGATION TRIGGER (RAM)
R-1519
R-1520
UNDELAYED
A/A PULSE
(AAM)
A/A PRIORITY
Q-1502
Q-1504
STORAGE
COUNTER
Q-1521
A/A REPLY PULSE (AAM)
OCK DIAGRAM


A/A THRESHOLD
AMPLIFIER
A/A COINCIDENCE
(AMPLITUDE MODULATED
VIDEO) FROM RDM)
4
5
ARI
709
R3
R4
MOTOR AND TACH
BLANKING TO RFM
C7
CR
8
6
+15V
K5
TO ASM
TO BEARING AND RANGE
MAG AMPL
C8
+28V
K4
TRANSMITT
MUTING FRO



9768SCC83107	1	SCHEMATIC							
QTY REQD	PART OR IDENT. NO.	ITEM NO	CODE IDENT	NOMENCLATURE OR DESCRIPTION	DIA	THICK	WIDTH	LENGTH	MATERIAL	MATL SPECIFICATION	ZONE
PART & SERIAL MARKING PER MIL STD 130 LOCATED				STOCK SIZE							
				LIST OF MATERIAL					DO NOT SCALE DRAWING	HOLE TOLERANCE PER ANSI B97	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES FRACTIONS ± .03 DECIMALS .X ± .03 .XX ± .010 ANGLES ± 1°

MATERIAL

FINISH MIL-F-

REF

USED ON

APPLICATION

CONTRACT NO. N61339-69-C-0041

HYDROSYSTEMS, INC.

DRAWN

CHECKED

APPROVED

MFG

21

NAVAL TRAINING DEVICE CENTER
ORLANDO FLORIDA

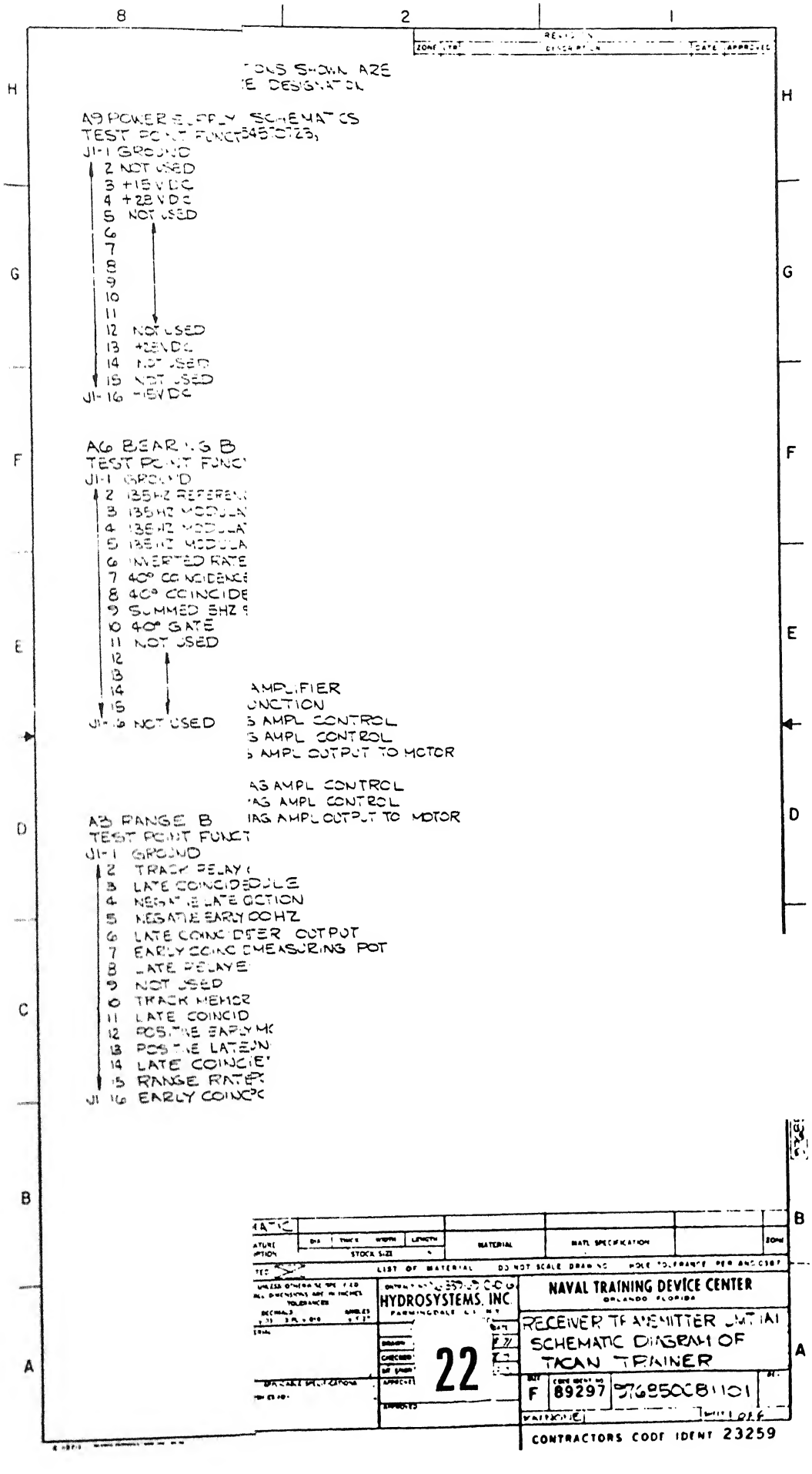
AIR TO AIR UNIT TRAINER
SCHEMATIC DIAGRAM OF
TACAN TRAINER

SIZE F | CODE IDENT NO 89297 | 9768SCC83107 | REV A

SCALE NONE | SHEET

CONTRACTORS CODE IDENT 23259

9768SCC83107


8
2
1
REVISIONS
ZONE LTR DESCRIPTION DATE APPROVED
TONS SHOWN ARE
E DESIGNATOR
A9 POWER SUPPLY SCHEMATICS
TEST POINT FUNCTION
J1-1 GROUND
2 NOT USED
3 +15 V DC
4 +28 V DC
5 NOT USED
6
7
8
9
10
11
12 NOT USED
13 +28 V DC
14 NOT USED
15 NOT USED
J1-16 +15 V DC
A6 BEARING B
TEST POINT FUNC
J1-1 GROUND
2 135 HZ REFEREN
3 135 HZ MODULA
4 135 HZ MODULA
5 135 HZ MODULA
6 INVERTED RATE
7 40° COINCIDENCE
8 40° COINCIDE
9 SUMMED 9HZ
10 40° GATE
11 NOT USED
12
13
14
15
J1-16 NOT USED
AMPLIFIER
UNCTION
S AMPL CONTROL
S AMPL CONTROL
S AMPL OUTPUT TO MOTOR
AS AMPL CONTROL
AG AMPL CONTROL
IAG AMPL OUTPUT TO MOTOR
A3 RANGE B
TEST POINT FUNCT
J1-1 GROUND
2 TRACK RELAY
3 LATE COINCIDENCE
4 NEGATIVE LATE GATION
5 NEGATIVE EARLY 90 HZ
6 LATE COINCIDENCE OUTPUT
7 EARLY COINC MEASURING POT
8 LATE RELAY
9 NOT USED
10 TRACK MEMOR
11 LATE COINCID
12 POSITIVE EARLY M
13 POSITIVE LATE JN
14 LATE COINCIDE
15 RANGE RATE
J1 16 EARLY COINC
A
B
C
D
E
F
G
H
MATERIAL
MATL SPECIFICATION
STOCK SIZE
LIST OF MATERIAL DO NOT SCALE DRAWING
HYDROSYSTEMS, INC.
22
NAVAL TRAINING DEVICE CENTER
ORLANDO FLORIDA
RECEIVER TRANSMITTER JUNCTION
SCHEMATIC DIAGRAM OF
TACAN TRAINER
F
89297
97G850CB1101
CONTRACTORS CODE IDENT 23259